

## 7.0 GLOSSARY AND ACRONYMS

ACRONYM OR TERM	DEFINITION
$\mu\text{g}/\text{m}^3$	microgram per cubic meter
$\mu\text{g}/\text{mL}$	microgram per milliliter
$^{132}\text{Xe}$	Xenon 132
1-hour average ozone concentrations	the EPA air quality standard for ozone is 0.12 part per million for a 1-hour average
$^{20}\text{Ne}$	Neon 20
$^{36}\text{Ar}$	Argon 36
$^{84}\text{Kr}$	Krypton 84
8-hour average ozone concentrations	the EPA air quality standard for ozone, designed to protect public health with an adequate margin of safety, is 0.085 parts per million (ppm), averaged over 8 hours
ac	acres
ACHP	Advisory Council on Historic Preservation
AEP	American Electric Power
afforestation	the conversion of bare or cultivated land into forest
AGR	acid gas removal
AHPA	Archeological and Historic Preservation Act
AIH	American Institute of Hydrology
AIRFA	American Indian Religious Freedom Act
ambient air	air of the surrounding environment; breathable air
ambient air pollutants	tropospheric gases that affect the absorptive characteristics of the atmosphere ( $\text{CO}$ , $\text{NO}_2$ , $\text{SO}_2$ and $\text{O}_3$ )
AMD	acid mine drainage
AMLIS	Abandoned Mine Land Inventory System
anthropogenic	caused or produced by humans
API Compendium	American Petroleum Institute
AQI	Air Quality Index
ARPA	Archeological and Historic Preservation Act
ASCC	Alaska Systems Coordinating Council
BACT	best available control technology
BEA	U.S. Bureau of Economic Analysis
BEG	Bureau of Economic Geology (University of Texas)
bgs	below ground surface
Big Sky Regional Partnership	consists of the states of Idaho, Montana, and South Dakota.
biomass	plant materials and animal wastes used especially as a source of fuel
BLM	Bureau of Land Management

BLS	Bureau of Labor Statistics
BMP	best management practice
bscfd	billion standard cubic feet per day
bsfc	brake specific fuel consumption
Btu/hp-hr	British thermal unit per horsepower-hour
Btu/scf	British thermal unit per standard cubic feet
c.f. or cu. ft.	cubic feet
CAA	Clean Air Act
CAAA	Clean Air Act Amendments (1990)
CAM	compliance assurance monitoring
CAN Europe	Climate Action Network Europe
Carbon Dioxide Capture	development and demonstration of technologies to efficiently separate CO <sub>2</sub> from emissions sources or the atmosphere and recovery of a concentrated stream of CO <sub>2</sub> that is amenable to sequestration or conversion
CAT	capillary absorption tubes
CBM	coal bed methane
CCP	CO <sub>2</sub> capture project
CCPI	Clean Coal Power Initiative
CCTP	Clean Coal Technology Program
CDM	Clean Development Mechanism
CEMs	continuous emissions monitors
CEQ	Council on Environmental Quality
CFC	chlorofluorocarbon
CFR	Code of Federal Regulations
CGA	Compressed Gas Association
CH <sub>4</sub>	methane
CMI	Carbon Mitigation Initiative
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	CO <sub>2</sub> equivalent
CO <sub>2</sub> -ECBM	carbon dioxide-enhanced coal bed methane
CO <sub>2</sub> -EOR	carbon dioxide-enhanced oil recovery
Coal-Seq	U.S Department of Energy research project designed to study various aspects of the sequestration process
Core R&D	includes laboratory studies and pilot plant operation, and small-scale field tests aimed at developing new technologies and new systems for GHG mitigation; these R&D efforts are focused in the areas of CO <sub>2</sub> capture, sequestration/storage, MMV, breakthrough concepts, and non-CO <sub>2</sub> GHG mitigation
CRBG	Columbia River Basalt Group

CRC	Canyon Reef Carriers
CREP	Conservation Reserve Enhancement Program
CRMP	Cultural Resource Management Plan
CSiTE	a research consortium, to perform fundamental research on terrestrial ecosystem carbon sequestration
CSLF	Carbon Sequestration Leadership Forum
CSO	Cognizant Secretarial Officers
CSSFA	Carbon Sequestration Science Focus Area
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
darcy	unit of permeability of a porous medium
DE	Distributed Energy program
DEA	diethanolamine
decayed organic materials	decomposition of animal and plant life
decennial	occurring every ten years
dissolved oxygen	amount of oxygen freely available in water necessary for aquatic life and the oxidation of organic materials
DOE	Department of Energy
DOI	Department of Interior
DOT	Department of Transportation
DPCC	Discharge Prevention Containment and Countermeasure/Discharge Cleanup and Removal Plan
dry domain	annual losses of water through evaporation at the earth's surface exceed annual water gains from precipitation
DSIRE	Database of State Incentives for Renewable Energy
EA	Environmental Assessment
ECAR	East Central Area Reliability Coordination Agreement
ECBM	enhanced coalbed methane
ecoregions	areas that share common climatic and vegetation characteristics
EEI	Edison Electric Institute
EERE	Energy Efficiency, & Renewable Energy office
EF	emission factor
EH	total hours worked by all employees during the calendar year
Eh	oxidation potential
EIA	Energy Information Administration
EIS	environmental impact statement
EMAN	Ecological Monitoring and Assessment Network
EMS	environmental management systems
endangered species	a species whose numbers are so small that the species is at risk of extinction

EO	Executive Order
EOR	enhanced oil recovery
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
EPRI	Electric Power Research Institute
EQIP	Environmental Quality Incentives Program
ERCOT	Electric Reliability Council of Texas, Inc
erosion	wearing away of land or soil by the action of wind, water, or ice
ES&H	environmental protection, safety, and health standards
ESA	Endangered Species Act
estuaries	water passage where the tide meets a river current
FAO	Food and Agricultural Organization
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FEMP	Federal Energy Management Program
FIA	Forest Inventory and Analysis Program
FLEP	Forest Land Enhancement Program
forestation	any land-use change to forest use
fossil fuels	non-renewable source of energy (coal, oil and natural gas), which are burned to release the stored chemical energy
FRCC	Florida Reliability Coordinating Council
ft	feet
FutureGen	an initiative to build the world's first integrated sequestration and hydrogen production research power plant; the project is intended to create the world's first zero-emissions fossil fuel plant, employ the latest technology and serve as a large-scale engineering laboratory for testing new clean power, carbon dioxide capture, and coal-to-hydrogen technologies
FWS	Fish and Wildlife Service
FY	fiscal year
g/mile	grams/mile
gal/month	gallon per month
GCCI	Global Climate Change Initiative
GDP	gross domestic product
GEF	Global Environmental Facility
geologic hazards	a geologic condition or phenomenon that presents a risk or is a potential danger to life and property, either naturally occurring (e.g., earthquakes, volcanic eruptions) or man-made (e.g., ground subsidence)

geologic sequestration	various geologic formations utilized to sequester the captured CO <sub>2</sub> , including depleted oil reservoirs, unmineable coal seams, saline formations, and other formations as determined on a site-specific basis
GHG	greenhouse gas
glaciation	expansion of continental glacial ice during a period of cold climate
gpd	gallon per day
gpm	gallons per minute
gpm	gallons per minute
greenhouse effect	a function of the concentration of water vapor, carbon dioxide, and other trace gases in the atmosphere that absorb terrestrial radiation leaving the surface of the earth
GRI	Gas Research Institute
groundwater	water in the zone of saturation below the water table
groundwater aquifers	porous subterranean regions saturated with groundwater
GSP	gross state product
GW	giga-watt
GWP	global warming potential (Measurement that describes its effect on climate change relative to a similar amount of CO <sub>2</sub> )
H <sub>2</sub> O	water vapor
H <sub>2</sub> O/MMscf	water vapor per million standard cubic feet
H <sub>2</sub> S	hydrogen sulfide
ha	hectare
HAPs	Hazardous Air Pollutants
hazardous waste	any waste or combination of wastes which pose a substantial present or potential hazard to human health, the environment, and plants or animals because such wastes are non-degradable or persistent in nature or because they can be biologically magnified, or because they can be lethal, or because they may otherwise cause or tend to cause detrimental cumulative effects
headwater streams	small narrow streams that collect much of the runoff and are the origin of most rivers
HFC	hydrofluorocarbon
hp	horsepower
hp / MMscf	horsepower per million standard cubic feet
hydrofracturing	process of expanding natural-occurring cracks in the rock with high pressure water
Hydrogen Fuel Initiative	an initiative that the President committed over five years to develop technology for commercially viable hydrogen-powered fuel cells
IC	internal combustion
IEA/GHG	International Energy Agency's Greenhouse Gas Research and Development Program
IECM-CS	Integrated Environmental Control Model-Carbon Sequestration

IGCC	integrated gasification combined cycle
igneous rocks	formed by the solidification and crystallization of a cooling magma (e.g., granite and basalt)
Illinois Basin Regional Partnership	consists of the states of Illinois, Indiana, and Kentucky
in	inch
inert	not readily reactive with other elements; forming few or no chemical compounds
INGAA	Interstate Natural Gas Association of America
INS	inelastic neutron scattering
in-situ	in place or 'on-site'
interglacial	warm period between two glacial periods
IOGCC	Interstate Oil and Gas Compact Commission
IPCC	Intergovernmental Panel on Climate Change
ISMS	Integrated Safety Management Systems
ITP	Industrial Technologies Program
JI	Joint Implementation
kg	kilogram
km	kilometer
kV	kilovolt
kW	kilowatt
kWh/MMscf	kilowatt-hour per million standard cubic feet
lb/hr	pounds per hour
LFEE	Laboratory For Energy and the Environment
LIBS	Laser Induced Breakdown Spectroscopy
LPSO	Lead Program Secretarial Officers
LULUCF	land use, land use change, and forestry
m	meter
M3ADI	Multi-Spectral, 3-Dimensional Aerial Digital Imagery
MAAC	Mid-Atlantic Area Council
MAIN	Mid-America Interconnected Network, Inc.
MDEA	3,4-methylenedioxy-N-ethylamphetamine
MEA	monoethanolamine
median	middle value in a set of measurements
metamorphic rocks	formed from other, pre-existing rocks that are subjected to very high temperatures and/or pressures (e.g., marble, quartzite, and slate)
mg/l	milligram per liter
mg/m <sup>3</sup>	milligram per cubic meter
mi	mile
millidarcy (mD)	one-thousandth of a darcy

MIT	Massachusetts Institute of Technology
MIT	mechanical integrity test
mm	millimeter
MM&V	monitoring, mitigation, and verification
MMBtu/hr	million British thermal unit per hour
MMBtu/MMscf	million British thermal unit per million standard cubic feet
MMscfd	million standard cubic feet per day
MMT	million metric tons
MMTCE	million metric ton carbon equivalent
MOA	memoranda of agreement
MPa	million pascal
mpg	miles per gallon
MRCSP	Midwest Regional Carbon Sequestration Partnership
MRO	Midwest Reliability Organization
MSDS	the Material Safety Data Sheet explains the hazards that are posed by use of the material, personal protective equipment that should be worn when the material is used, and other precautionary measures
MSDS	see Material Safety Data Sheets
MSHA	Mine Safety and Health Administration
MT	metric ton
municipal solid waste	solid waste resulting from or incidental to residential, community, trade or business activities, including garbage, rubbish, ashes, and all other solid waste
MW	megawatt
N.A. or NA	not available
N <sub>2</sub> -ECBM	nitrogen-enhanced coal bed methane
N <sub>2</sub> O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAICS	North American Industry Classification System
NAS	National Academies of Science
natural greenhouse effect	energy that is absorbed from terrestrial radiation and warms the Earth's surface and atmosphere
natural resources	the presence, distribution, quantity, and quality of geologic resources that are of economic value (e.g., oil, natural gas, coal, and others)
NCCTI	National Climate Change Technology Initiative
NEAP	Natural Events Action Plan
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Council
NESHAPs	National Emission Standards for Hazardous Air Pollutants

NETL	National Energy Technology Laboratory
ng/mL	nanogram per milliliter
NGL	natural gas liquids
NGO	nongovernmental organization
NHPA	National Historic Preservation Act
NIOSH	National Institute of Occupational Safety and Health
NJDEP	New Jersey Department of Environmental Protection
NMFS	National Marine Fisheries Service
NNSA	National Nuclear Security Administration
NO	nitric oxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
nonattainment area	locality where air pollution levels persistently exceed National Ambient Air Quality Standards, or that contributes to ambient air quality in a nearby area that fails to meet standards
non-CO <sub>2</sub> GHG Mitigation	the pursuit of methods to reduce or avoid methane emissions by integrating abatement with energy production, conversion, and use; also, coordination with the U.S. Environmental Protection Agency (EPA) to assess the role that non-CO <sub>2</sub> emissions abatement can play in a nationwide strategy for reducing GHG emissions intensity
nonpoint source pollution	portion of precipitation on land that ultimately reaches streams often with dissolved or suspended material
non-renewable resources	resources that are not naturally regenerated or renewed
NO <sub>x</sub>	nitrogen oxides
NPCC	Northeast Power Coordinating Council
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRHP	National Register of Historic Places
NSPS	New Source Performance Standards
NSR	New Source Review
NWCC	National Wind Coordinating Committee
O <sub>3</sub>	ozone
OAI	Office of Advanced Initiatives
OAQPS	Office of Air Quality Planning and Standards
°C	degree Celsius
°F	degree Fahrenheit
OGIP	original gas in place
OH	hydroxyl radical
OOIP	original oil in place
OPS	Office of Pipeline Safety
OSHA	Occupational Health And Safety Administration

OSRME	Office of Surface Mining Reclamation Enforcement
oxygen-depleting substances	any substance that causes a net loss of ozone in the stratosphere
PA	programmatic agreement
pathogen	organism capable of causing disease
Pb	lead
PC	pulverized coal
PCOR	Plains CO <sub>2</sub> Reduction Partnership. Consists of the states of Iowa, Missouri, Minnesota, North Dakota, Nebraska, Montana, South Dakota, Wisconsin, and Wyoming
pegmatites	coarse-grained veins formed when molten rock cools very slowly
permafrost	permanently frozen soil
PFCs	perfluorocarbons
pH	a measure of acidity and alkalinity of a solution (scale: 1-14; lower numbers indicate increasing acidity and higher numbers increasing alkalinity; which each unit of change represents a tenfold change)
PHMSA	Pipeline and Hazardous Materials Safety Administration
PLF	Public Lands Foundation
PM	particulate matter
PM-10	particular matter particles up to 10 micrometers in diameter
PM-2.5	particular matter particles up to 2.5 micrometers in diameter
PNNL	Pacific Northwest National Laboratory
post-combustion capture	capture of CO <sub>2</sub> are mainly limited to the capture location (e.g., at the power plants, oil refineries, or industrial sites); effects would be site-specific, directly associated with the capture technology utilized, and dependent on the industrial CO <sub>2</sub> source
POTWs	Publicly Owned Treatment Works
ppb	parts per billion
PPII	Power Plant Improvement Initiative
ppm	parts per million
primary particles	particles such as dust from roads or black carbon (soot) from combustion sources, are emitted directly into the atmosphere
PSA	pressure swing absorption
PSD	Prevention of Significant Deterioration
psi	pounds per square inch
psig	pounds per square inch gauge
QBtu	quadrillion British thermal units
R&D	research and development
RAMP	Rural Abandoned Mine Program
RCRA	Resource Conservation and Recovery Act
RD&D	research, development, and demonstration
reforestation	action of renewing forest cover by planting seeds or young trees

Regional Carbon Sequestration Partnerships	teams comprised of state agencies, universities, NGOs, and private companies with the goal of evaluating and pursuing opportunities for carbon sequestration deployment
reservoirs	a pond or lake where water is collected and stored until needed; or a porous and permeable sedimentary rock formation capable of storing gas or liquids.
RMOTC	Rocky Mountain Oilfield Testing Center
RMP	risk management plan
ROW	right-of-way
RPA	Resource Planning Act
RS	Revised Statute
runoff	rainfall not absorbed by soil
SACROC	Scurry Area Canyon Reef Operators Committee
saline formations	layers of porous rock that are saturated with brine water
SAMAB	Southern Appalachian Man and the Biosphere
SCADA	supervisory control and data acquisition
scf/day	standard cubic feet per day
SDWA	Safe Drinking Water Act
SECA	Solid State Energy Conversion Alliance
SECARB	Southeast Regional Carbon Sequestration Partnership
secondary containment	measure to prevent the release of stored liquids in the event of a failure of the primary containment tank
secondary particles	particles that are formed in the atmosphere from primary gaseous emissions
sedimentary rocks	formed when sediments are compacted or cemented together into a solid rock (e.g., sandstone, shale, and limestone)
sedimentation	solids naturally settling out of slow water in rivers, streams and other water bodies
separation membranes	allow CO <sub>2</sub> to pass through while excluding other parts
sequestration	development and demonstration of technologies for the placement of CO <sub>2</sub> into a repository such that it will remain stored for very long periods of time (hundreds to thousands of years); the three potential pathways for storage are geologic sequestration, terrestrial sequestration, and ocean sequestration
SERC	Southeastern Electric Reliability Council
SF <sub>6</sub>	sulfur hexafluoride
SF <sub>6</sub>	Sulfur hexafluoride
SHPO	State Historic Preservation Officer
siltation	see <i>sedimentation</i>
SIP	State Implementation Plan
SMCRA	Surface Mining Control and Reclamation Act
SO <sub>2</sub>	sulfur dioxide

socioeconomics	study of the social and economic impacts of any product or service
solid waste	garbage, and other discarded solid materials resulting from industrial, commercial and agricultural operations, and from community activities
sorbents	materials that soak up liquids
Southeast Regional Partnership	consists of the states of Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia
Southwest Regional Partnership	consists of the states of Arizona, Colorado, Kansas, Nebraska, New Mexico, Oklahoma, Texas, Utah, and Wyoming
SO <sub>x</sub>	sulfur oxides
SPCC	Spill Prevention Control and Countermeasures
SPDES	State Pollutant Discharge Elimination System
SPP	Southwest Power Pool, Inc.
stratosphere	region of the atmosphere above troposphere, and continues from 6 to 30 miles above the surface (10 km to about 50 km); most commercial airline traffic occurs in the lower part of the stratosphere
surface water	rivers, streams, lakes, ponds, reservoirs, wetlands, estuaries and coastal waters
SWPPP	Storm Water Pollution Prevention Plan
TBD	to be determined
TCAPP	Technology Cooperation Agreement Pilot Project
TCF	trillion cubic feet
TDS	total dissolved solids
TEG	triethylene glycol
TESS	Threatened and Endangered Species System
threatened species	species that is likely to become an endangered species within the foreseeable future throughout all or a significant part of its range
tonnes	metric ton
topography	physical features of surface land
total dissolved solids	accumulated total of all solids that might be dissolved in water
tpd	tons per day
tpy	tons per year
trace elements	a chemical element present in minute quantities
tracers	used to determine the fate and transport of the injected CO <sub>2</sub> stream
troposphere	lowest region of the atmosphere, and extends from the Earth's surface up to about 30 miles (10 kilometers) in altitude; virtually all human activities occur in the troposphere
TRS	total reduced sulfur
TSA	temperature swing absorption
TSCA	Toxic Substances Control Act
TSD	treatment, storage, and disposal

tundra	climate extends north of the Arctic Circle, from the Subarctic region to the Arctic Ocean; like the Subarctic region, the Tundra experiences extremely long periods of daylight in the summer and extended periods of darkness during winter months; annual precipitation is less than 14 inches, and much of the precipitation falls during the warm season in the form of rain or occasional wet snows
U.S.	United States
UIC	underground injection control
UMWA	United Mine Workers of America
UNFCCC	United Nations Framework Convention on Climate Change
USACE	U.S. Appalachian Coalfield Region
USC	United States Code
USDA	U.S. Department of Agriculture
USDW	Underground Source of Drinking Water
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
VOCs	volatile organic compounds
VRGGP	National Inventory and Voluntary Reporting of Greenhouse Gases Program
VRM	visual resource management
WECC	Western Electricity Coordinating Council
WESTCARB	West Coast Regional Carbon Sequestration Partnership. Consists of the states of Alaska, Arizona, California, Nevada, Oregon, and Washington
wetland	land areas which are seasonally or permanently saturated with water
xerophytic	pertaining to plants that are structurally adapted for life and growth with a limited water supply
yr	year